



ABSTRACT

An object of the present invention is Methods are provided to form a thin film reproducibly in a process for forming the thin film on the inner wall surface facing a space formed in a substrate by plasma CVD. A thin film 22-film is produced on an inner wall surface 20b-surface of a substrate 20-substrate facing a space 23-space formed in the substrate 20-substrate. The substrate 20-substrate is contained in a chamber for plasma CVD process. A gas for plasma reaction is then flown into the space 23-space and a pulse voltage is applied on the substrate 20-substrate without substantially applying a direct bias voltage on the substrate 20-substrate to form the thin film on the inner wall surface 20b-surface.